



IFW #  
PATENT  
DOCKET NO.  
WSS-597.01  
(26034-59701)

In re Application of:

Cunningham, Philip R.

Application No: 10/612,224

Filed: July 1, 2003

For: Methods and Compositions for  
Identification of Antibiotics that are  
not Susceptible to Antibiotic  
Resistance

Art Unit: 1636

Examiner: Akhavan, Ramin

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on *November 18, 2005*.

  
John Barretto

**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. Copies of references A through BO are enclosed.

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**REMARKS**

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed:

- ☐ (1) within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office Action** on the merits, or before the mailing of a **first Office Action** after the filing of a request for continued examination under 37 C.F.R. 1.114; or
- ☒ (2) after the period defined in (1) but before the mailing date of a **final action** or a **notice of allowance** under 37 C.F.R. 1.311, and
- ☐ the requisite Statement is below, **OR**
- ☒ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein, or
- ☐ (3) after the mailing date of a **final action** or **notice of allowance** but before the payment of the **issue fee**, **AND**
- ☐ the requisite Statement is below, **AND**
- ☐ the requisite petition fee under 37 C.F.R. 1.17(p), namely **\$180.00** is included herein.

It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.



### STATEMENT

As required under 37 C.F.R. 1.97(e), Applicant(s), through the undersigned, hereby state either that **[check the appropriate space only if either (2) or (3) is checked on the previous page and the Statement is required]**:

- ☐ 1. Each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application **not more than three months** prior to the filing of the Information Disclosure Statement; or
- ☐ 2. No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this Statement after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to **any individual** designated in 37 C.F.R. 1.56(c) **more than three months** prior to the filing of the Information Disclosure Statement.

The Commissioner is hereby authorized to charge the requisite petition fee under 37 C.F.R. 1.17(p), namely **\$180.00**, together with any further amount required for proper filing of this paper, to our Deposit Account No. **06-1448**, Reference: **WSS-597.01**. A duplicate copy of this Information Disclosure Statement is provided.

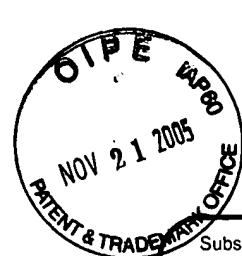
Respectfully submitted,



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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete if Known**

Application Number	10/612,224
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First Named Inventor	Cunningham, Philip R.
Art Unit	1636
Examiner Name	Akhavan, Ramin
Attorney Docket Number	WSS-597.01

**U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
	A	US-4,772,555	09/20/1988	DeBoer, Herman	
	B	US-4,873,316	10/10/1989	Meade, H. et al.	
	C	US-5,981,280	11/09/1999	Fang, L. et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	D	Calame and Eaton (1988) Transcriptional controlling elements in the immunoglobulin and T cell receptor loci. <i>Adv. Immunol.</i> 43:235-275.	
	E	Nielsen, D. A. et al. (1989) A highly sensitive, mixed-phase assay for chloramphenicol acetyltransferase activity in transfected cells. <i>Anal. Biochem.</i> 179: 19-23.	
	F	Cunningham, P., et al. (1993) Functional effects of base changes which further define the decoding center of Escherichia coli 16S ribosomal RNA: mutation of C1404, G1405, C1496, G1497, and U1498. <i>Biochemistry</i> 32: 7172-7180.	
	G	Denman, R. et al. (1989) In vitro assembly of 30S and 70S bacterial ribosomes from 16S RNA containing single base substitutions, insertions, and deletions around the decoding site (C1400). <i>Biochemistry</i> 28:1002-1011.	
	H	Makosky, P. C. et al. (1987) Spectinomycin resistance at site 1192 in 16S ribosomal RNA of E. coli: an analysis of three mutants. <i>Biochimie</i> 69: 885-889.	
	I	Kurjan and Herskowitz (1982) Structure of a yeast pheromone gene (MF alpha): a putative alpha- factor precursor contains four tandem copies of mature alpha-factor. <i>Cell</i> 30:933-943.	
	J	Banerji et al. (1983) A lymphocyte-specific cellular enhancer is located downstream of the joining region in immunoglobulin heavy chain genes. <i>Cell</i> 33:729-740.	
	K	Queen, C. & Baltimore, D. (1983) Immunoglobulin gene transcription is activated by downstream sequence elements. <i>Cell</i> 33:741-748.	
	L	Kaufman et al. (1987) Translation efficiency of polycistronic mRNAs and their utilization to express heterologous genes in Mammalian Cells. <i>EMBO J.</i> 6:187-195	
	M	Baldari et al. (1987) A novel leader peptide which allows efficient secretion of a fragment of human interleukin 1 $\beta$ in <i>Saccharomyces cerevisiae</i> ; <i>EMBO J.</i> 6:229-234	

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**INFORMATION DISCLOSURE  
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Filing Date	July 1, 2003
First Named Inventor	Cunningham, Philip R.
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Attorney Docket Number	WSS-597.01

N	Winoto and Baltimore (1989) A novel, inducible and T cell-specific enhancer located at the 3' end of the T cell receptor $\alpha$ locus; EMBO J. 8:729-733
O	Powers, T. et al. (1991) A functional pseudoknot in 16S ribosomal RNA; EMBO J. 10: 2203-2214
P	Govantes, F. et al. (1998) Mechanism of translational coupling in the nifLA operon of <i>Klebsiella pneumoniae</i> ; EMBO J. 17(8):2368-2377
Q	Schottel, J. L., et al. (1984) Effects of alterations in the translation control region on bacterial gene expression: use of <i>cat</i> gene constructs transcribed from the <i>lac</i> promoter as a model system; Gene 28: 177-193
R	Yanisch-Perron, C., et al. (1985) Improved M13 phage cloning vectors and host strains: nucleotide sequences of the M13mp18 and pUC19 vectors; Gene 33:103-119
S	Schultz et al. (1987) Expression and secretion in yeast of a 400-kDa envelope glycoprotein derived from Epstein-Barr virus; Gene 54:113-123
T	Smith, D.B. and Johnson, K.S. (1988) Single-step purification of polypeptides expressed in <i>Escherichia coli</i> as fusions with glutathione S-transferase; Gene 67:31-40
U	Pinkert et al. (1987) An albumin enhancer located 10 kb upstream functions along with its promoter to direct efficient, liver-specific expression in transgenic mice; Genes Dev. 1:268-277
V	Luria, S.E. & Burrous, J.W. (1957) Hybridization between <i>escherichia coli</i> and shigella; J. Bacteriol. 74:461-476
W	Asai, T., (1999) Construction and Initial Characterization of <i>Escherichia coli</i> Strains with Few or No Intact Chromosomal rRNA Operons; J. Bacteriol. 181: 3803-3809
X	Voulgaris, J., et al. (1999) Increased <i>rrn</i> Gene Dosage Causes Intermittent Transcription of rRNA in <i>Escherichia coli</i> ; J. Bacteriol. 181: 4170-4175
Y	Herr, W., et al. (1979) Mechanism of Ribosomal Subunit Association: Discrimination of Specific Sites in 16S RNA Essential for Association Activity; J. Mol. Biol. 130: 433-449
Z	Brow, D. A. & Noller, H. F. (1983) Protection of Ribosomal RNA from Kethoxal in Polyribosomes; J. Mol. Biol. 163:112-118
AA	Hanahan, D. (1983) Studies on Transformation of <i>Escherichia coli</i> with Plasmids; J. Mol. Biol. 166:557-580
AB	Moazed, D. & Noller, H.F. (1986) Interconversion of Active and Inactive 30 S Ribosomal Subunits is Accompanied by a Conformational Change in the Decoding Region of 16S rRNA; J. Mol. Biol. 191:483-493
AC	Triman, K., et al. (1989) Isolation of Temperature-sensitive Mutants of 16 S rRNA in <i>Escherichia coli</i> ; J. Mol. Biol. 209:645-653
AD	Lee, K., et al. (1997) In Vivo Determination of RNA Structure-Function Relationships: Analysis of the 790 Loop in Ribosomal RNA; J. Mol. Biol. 269:732-743
AE	Sergiev, P. V., et al. (2000) Mutations at Position A960 of E. Coli 23 S Ribosomal RNA Influence the Structure of 5 S Ribosomal RNA and the Peptidyltransferase Region of 23 S Ribosomal RNA; J. Mol. Biol. 299:379-389
AF	Morosyuk S. V., et al. (2000) Structure and Function of the Conserved 690 Hairpin in <i>Escherichia coli</i> 16 S Ribosomal RNA: Analysis of the Stem Nucleotides; J. Mol. Biol. 300 (1):113-126

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First Named Inventor

Cunningham, Philip R.

Art Unit

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Akhavan, Ramin

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AG	Vila-Sanjurjo, A. et al. (2001) Mutational Analysis of the Conserved Bases C1402 and A1500 in the Center of the Decoding Domain of <i>Escherichia coli</i> 16 S rRNA Reveals an Important Tertiary Interaction; J. Mol. Biol. 308: 457-463
AH	Morosyuk S. V., et al. (2001) Structure and Function of the Conserved 690 Hairpin in <i>Escherichia coli</i> 16 S Ribosomal RNA. II. NMR Solution Structure; J. Mol. Biol. 307 (1):197-211
AI	Morosyuk S. V., et al. (2001) Structure and Function of the Conserved 690 Hairpin in <i>Escherichia coli</i> 16 S Ribosomal RNA. III. Functional Analysis of the 690 Loop; J. Mol. Biol. 307 (1):213-228
AJ	Hui, A., et al. (1987) Directing Ribosomes to a Single mRNA Species: A Method to Study Ribosomal RNA Mutations and Their Effects on Translation of a Single Messenger in <i>Escherichia coli</i> ; Methods Enzymol. 153: 432-452
AK	Sigmund, C. D., et al. (1988) Antibiotic Resistance Mutations in Ribosomal RNA Genes of <i>Escherichia coli</i> ; Methods Enzymol. 164: 673-690
AL	Goeddel (1990) Systems for Heterologous Gene Expression; Methods Enzymol. 185:3-7
AM	Gottesman, S. (1990) Minimizing Proteolysis in <i>Escherichia coli</i> : Genetic Solutions; Methods Enzymol. 185:119-128
AN	Calos, M.P. (1978) DNA sequence for a low-level promoter of the <i>lac</i> repressor gene and an 'up' promoter mutation; Nature 274:762-765
AO	Seed, B. (1987) An LFA-3 cDNA encodes a phospholipid-linked membrane protein homologous to its receptor CD2; Nature 329:840
AP	Sigmund, C. D., et al. (1984) Antibiotic resistance in 16S and 23S ribosomal RNA genes of <i>Escherichia coli</i> ; Nucl. Acids Res. 12: 4653-4663
AQ	Dower, W. J., et al. (1988) High efficiency transformation of <i>E. coli</i> by high voltage electroporation; Nucl. Acids Res. 16: 6127
AR	Wada et al. (1992) Codon usage tabulated from the GenBank genetic sequence data; Nucl. Acids Res. 20:2111-2118
AS	Capaldi, D. & Reese, C. (1994) Use of the 1-(2-fluorophenyl)-4-methoxypiperidin-4-yl (Fmp) and related protecting groups in oligoribonucleotide synthesis: stability of internucleotide linkages to aqueous acid; Nucl. Acids Res. 22:2209-2216
AT	Gutell, R. R. (1994) Collection of small subunit (16S- and 16S-like) ribosomal RNA structures: 1994; Nucl. Acids Res. 22: 3502-3507
AU	Chen, H., et al. (1994) Determination of the optimal aligned spacing between the Shine - Dalgarno sequence and the translation initiation codon of <i>Escherichia coli</i> mRNAs; Nucl. Acids Res. 22: 4953-4957
AV	Maidak, B. L. et al. (1996) The Ribosomal Database Project (RDP); Nucl. Acids Res. 24: 82-85
AW	O'Connor, M., et al. (2001) Mutagenesis of the peptidyltransferase center of 23S rRNA: the invariant U2449 is dispensable; Nucl. Acids Res. 29: 710-715
AX	O'Connor, M. et al. (2001) Enhancement of translation by the epsilon element is independent of the sequence of the 460 region of 16S rRNA; Nucl. Acids Res. 29: 1420-1425
AY	Sigmund, C. D. et al. (1982) Erythromycin resistance due to a mutation in a ribosomal RNA operon of <i>Escherichia coli</i> ; Proc. Natl. Acad. Sci. U.S.A. 79: 5602-5606

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Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)			<b>Complete if Known</b>	
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AZ	de Boer, H. A., et al. (1983) The tac promoter: A functional hybrid derived from the <i>trp</i> and <i>lac</i> promoters; Proc. Natl Acad. Sci. USA 80:21-25
BA	Tapprich, W. & Hill, W. (1986) Involvement of bases 787-795 of <i>Escherichia coli</i> 16S ribosomal RNA in ribosomal subunit association; Proc. Natl Acad. Sci. USA 83: 556-56
BB	Hui, A., et al. (1987) Specialized ribosome system: Preferential translation of a single mRNA species by a subpopulation of a mutated ribosomes in <i>Escherichia coli</i> ; Proc. Natl. Acad. Sci. U.S.A. 84: 4762-4766
BC	Carter-Muenchau, P. & Wolf, R. E. (1989) Growth-rate dependent regulation of 6-phosphogluconate dehydrogenase level mediated by an anti-Shine-Dalgarno sequence located within the <i>Escherichia coli</i> <i>gnd</i> structural gene; Proc. Natl. Acad. Sci. USA 86:1138-1142
BD	Tapprich, W., et al. (1989) Mutation at position 791 <i>Escherichia coli</i> 16S ribosomal RNA affects processes involved in the initiation of protein synthesis; Proc. Natl Acad. Sci. USA 86: 4927-4931
BE	Byrne and Ruddle (1989) Multiplex gene regulation: A two-tiered approach to transgene regulation in transgenic mice; Proc. Natl. Acad. Sci. USA 86:5473-5477
BF	Stormo, G. D., et al. (1982) Characterization of translational initiation sites in <i>E. coli</i> ; Nucleic Acids Res. 10: 2971-2996
BG	Brosius, J., et al. (1981) Construction and Fine Mapping of Recombinant Plasmids Containing the <i>rnmB</i> Ribosomal RNA Operon of <i>E. Coli</i> ; Plasmid 6: 112-118
BH	Maden, B. E. (1990) The Numerous Modified Nucleotides in Eukaryotic Ribosomal RNA; Prog. Nucleic Acid Res. Mol. Biol. 39: 241-303
BI	Koosha, H., et al. (2000) Alterations in the peptidyltransferase and decoding domains of ribosomal RNA suppress mutations in the elongation factor G gene; RNA. 6: 1166-1173
BJ	Lee, K., et al. (1996) Genetic analysis of the Shine-Dalgarno interaction: Selection of alternative functional mRNA-rRNA combinations; RNA 2: 1270-1285
BK	Edlund et al. (1985) Cell-Specific Expression of the Rat Insulin Gene: Evidence for Role of Two Distinct 5' Flanking Elements; Science 230:912-916
BL	Kessel and Gruss (1990) Murine Developmental Control Genes; Science 249:374-379
BM	Higuchi, R. (1989) Using PCR to Engineer DNA; PCR Technology (Erich, H.A., ed.), pp. 61-70, Stockton Press, New York
BN	Lee, K., et al. Genetic Approaches to Studying Protein Synthesis: Effects of Mutations at Pseudouridine 516 and A535 in <i>Escherichia coli</i> 16S rRNA. Symposium: Translational Control: A Mechanistic Perspective at the Experimental Biology 2001 Meeting (2001)
BO	Miller, J.H. (1992) Procedures for Working with <i>lac</i> ; A Short Course in Bacterial Genetics, (Miller, J. H., ed.), pp. 71-80, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**